

WHAT IS CLAIMED IS:

1. An inkjet printing method using a printing head having a plurality of nozzles capable of ejecting ink for printing an image by ejecting ink based on printing data which instructing ejection or non-ejection of ink, wherein  
5 said printing data corresponding to an abnormal nozzle malfunctioning in ink-ejection is added to the printing data corresponding to a neighboring nozzle of the abnormal  
10 nozzle.

2. An inkjet printing method as claimed in claim 1, wherein  
said plurality of nozzles are aligned next to each  
15 other along a predetermined direction; and  
when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, the printing data corresponding to the abnormal nozzle is added to at least one of the printing data corresponding to an (N-M) th neighboring nozzle and  
20 an (N+M) th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle.

3. An inkjet printing method as claimed in claim 1,  
25 wherein  
said plurality of nozzles are aligned next to each other along a predetermined direction; and

when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, the printing data corresponding to the abnormal nozzle is added to at least one of the printing data corresponding to an (N-1) th neighboring nozzle and  
5 an (N+1) thneighboringnozzle (whereNisapositiveinteger) arranged in the neighborhood of the N-th abnormal nozzle.

4. An inkjet printing method as claimed in claim 2, wherein  
10 a ratio of the printing data corresponding to the abnormal nozzle to be added to the printing data corresponding to the neighboring nozzles is determined based on states of the neighboring nozzles.

15 5. An inkjet printing method as claimed in claim 4, wherein  
said states of the neighboring nozzles are obtained from a shooting information based on a landing result of ink ejected out of the neighboring nozzle on a printing  
20 medium.

6. An inkjet printing method as claimed in claim 5, wherein  
said shooting information includes at least one of  
25 information about the landing position of ink on the printing medium and the diameter of dot formed by ink landed on the printing medium.

7. An inkjet printing method as claimed in claim 1,  
wherein,

when the printing data corresponding to the abnormal  
5 nozzle is added to that corresponding to the neighboring  
nozzle, a printing resolution of the printing head is  
improved.

8. An inkjet printing method as claimed in claim 1,  
10 wherein

an image is completely printed in a predetermined area  
of the printing medium by a single movement of the printing  
head relative to the printing medium while ink is being  
ejected out of the nozzle of the printing head based on  
15 the printing data.

9. An inkjet printing method as claimed in claim 1,  
wherein

an image is completely printed in a predetermined area  
20 of the printing medium by moving a single movement of a  
single printing head relative to the printing medium while  
ink is being ejected from nozzle of the single printing  
head based on the printing data.

25 10. An inkjet printing method as claimed in claim 1,  
wherein

said manner of adding the printing data corresponding

to the abnormal nozzle to that corresponding to the neighboring nozzle is varied depending upon a type of printing medium.

5           11. An inkjet printing method as claimed in claim 1, further comprising the steps of:

          printing a detection pattern on a printing medium by using the printing head for detecting the state of the nozzle; and

10           detecting the abnormal nozzle based on the detection pattern printed on the printing medium.

          12. An inkjet printing apparatus for printing an image by use of a printing head having a plurality of nozzles capable of ejecting ink and by ejecting ink out of the nozzles based on printing data which instructing ejection or non-ejection of ink, comprising

          compensation means for adding the printing data corresponding to an abnormal nozzle in ink ejection state to the printing data corresponding to a neighboring nozzle arranged in the neighborhood of the abnormal nozzle.

          13. An inkjet printing apparatus as claimed in claim 12, wherein

          said plurality of nozzles are aligned next to each other along a predetermined direction; and

said compensation means performs a compensation process in which when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, the printing data corresponding to the abnormal nozzle is added to at least one of the printing data corresponding to an (N-M) th neighboring nozzle and an (N+M) th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle.

10 14. An inkjet printing apparatus as claimed in claim 12, wherein

said plurality of nozzles are aligned next to each other along a predetermined direction; and

15 said compensation means performs a compensation process in which when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, the printing data corresponding to the abnormal nozzle is added to at least one of the printing data corresponding to an (N-1) th neighboring nozzle and an (N+1) th neighboring nozzle (where  
20 N is a positive integer) arranged in the neighborhood of the N-th abnormal nozzle.

15 15. An inkjet printing apparatus as claimed in claim 13, wherein

25 said compensation means determines a ratio of the printing data corresponding to the abnormal nozzle to be added to the printing data corresponding to the neighboring

nozzles based on states of the neighboring nozzles.

16. An inkjet printing apparatus as claimed in claim 15, wherein

5       said states of the neighboring nozzles are obtained from the shooting information of ink ejected out of the neighboring nozzles and landed on a printing medium.

17. An inkjet printing apparatus as claimed in claim 10 16, wherein

      said shooting information includes at least one of data about the landing position of ink on the printing medium and the diameter of dot formed by ink landed on the printing medium.

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18. An inkjet printing apparatus as claimed in claim 12, further comprising:

      means for improving a printing resolution of the printing head when the printing data corresponding to the 20 abnormal nozzle is added to that corresponding to the neighboring nozzle.

19. An inkjet printing apparatus as claimed in claim 12, further comprising:

25       means for completely printing an image in a predetermined area on the printing medium by a single movement of the printing head relative to the printing medium

while ink is being ejected from nozzles of the printing head based on the printing data.

20. An inkjet printing apparatus as claimed in claim  
5 12, further comprising:

means for completely printing an image in a predetermined area on the printing medium by moving a single movement of a single printing head relative to the printing medium while ink is being ejected from nozzles of the single  
10 printing head based on the printing data.

21. An inkjet printing apparatus as claimed in claim  
12, wherein

said compensation means add the printing data  
15 corresponding to the abnormal nozzle to that corresponding to the neighboring nozzle in a different manner depending upon the type of the printing medium.

22. An inkjet printing apparatus as claimed in claim  
20 12, further comprising:

control means for printing a detection pattern on a printing medium by using the printing head, for detecting the state of the nozzle, and

detection means for detecting the abnormal nozzle  
25 based on the detection pattern printed on the printing medium.